What is claimed is:

- 1. A hydrogel biomedical article formed from macromers having a polymeric backbone comprising units having a 1,2-diol or 1,3-diol structure and at least two pendant chains bearing crosslinkable groups.
- 2. The hydrogel biomedical article of claim 1, wherein the backbone polymer is a polyhydroxy polymer.
- 3. The hydrogel biomedical article of claim 1, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via the 1,2-diol or 1,3-diol groups.
- 4. The hydrogel biomedical article of claim 1, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via cyclic acetal linkages.
- 5. The hydrogel biomedical article of claim 1, wherein the backbone polymer comprises poly(vinyl alcohol) (PVA) and copolymers thereof.
- 6. The hydrogel biomedical article of claim 1, wherein the macromer has the formula:

$$\begin{array}{c|c} H_2 & H_2 \\ \hline C & C \\ \hline CH & CH \\ \hline \\ R_1 & O \\ \hline \\ C & R_2 \\ \hline \\ R & N & R_3 \\ \end{array}$$

in which R is a linear or branched  $C_1$ - $C_8$  alkylene or a linear or branched  $C_1$ - $C_{12}$  alkane;  $R_1$  is hydrogen, a  $C_1$ - $C_6$  alkyl, or a cycloalkyl;  $R_2$  is hydrogen or a  $C_1$ - $C_6$  alkyl; and  $R_3$  is an olefinically unsaturated electron attracting copolymerizable radical having up to 25 carbon atoms.

7. The hydrogel biomedical article of claim 1, wherein the macromer further comprises pendant modifier groups.

- 8. The hydrogel biomedical article of claim 1, further comprising an active agent.
- 9. The hydrogel biomedical article of claim 8, wherein the hydrogel releases the active agent over a period of time ranging from about 1 day to 6 months.
- 10. The hydrogel biomedical article of claim 1, wherein the hydrogel is biodegradable.
- 11. The hydrogel biomedical article of claim 1, further comprising a contrast agent.
- 12. The hydrogel biomedical article of claim 1, wherein the crosslinkable groups are crosslinked via free radical polymerization.
- 13. The hydrogel biomedical article of claim 11, wherein the free radical polymerization is redox initiated.
- 14. The hydrogel biomedical article of claim 12, wherein the crosslinkable groups are olefinically unsaturated groups.
- 15. The hydrogel biomedical article of claim 1, wherein the article is selected from the group consisting of a catheter, tubing, vascular graft, heart valve, suture, prosthesis, dialysis membrane, filter, sensor, wound dressing, and drug delivery article.
- 16. The hydrogel biomedical article of claim 1, wherein the article is a microsphere.
- 17. The hydrogel biomedical article of claim 1, wherein the hydrogel is a coating on the article.
- 18. The hydrogel biomedical article of claim 1, wherein the article is formed in a mold.
- 19. The hydrogel biomedical article of claim 1, wherein the article is formed on a substrate.
- 20. A method of making hydrogel biomedical articles comprising crosslinking macromers having a polymeric backbone comprising units having a 1,2-diol or 1,3-diol structure and at least two pendant chains bearing crosslinkable groups.

- 21. The method of claim 20, wherein the backbone polymer is a polyhydroxy polymer.
- 22. The method of claim 20, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via the 1,2-diol or 1,3-diol groups.
- 23. The method of claim 20, wherein the pendant chains bearing crosslinkable groups are attached to the backbone via cyclic acetal linkages.
- 24. The method of claim 20, wherein the polymer comprises poly(vinyl alcohol) (PVA) and copolymers thereof.
  - 25. The method of claim 20, wherein the macromer has the formula:

$$\begin{array}{c|c}
H_2 & H_2 \\
C & C \\
CH & CH \\
R_1 & O \\
C & R_2 \\
R & N & R_3
\end{array}$$

in which R is a linear or branched  $C_1$ - $C_8$  alkylene or a linear or branched  $C_1$ - $C_{12}$  alkane;  $R_1$  is hydrogen, a  $C_1$ - $C_6$  alkyl, or a cycloalkyl;  $R_2$  is hydrogen or a  $C_1$ - $C_6$  alkyl; and  $R_3$  is an olefinically unsaturated electron attracting copolymerizable radical having up to 25 carbon atoms.

- 26. The method of claim 20, wherein the macromer further comprises pendant modifier groups.
- 27. The method of claim 20, further comprising administering an active agent.
- 28. The method of claim 27, wherein the active agent is encapsulated in the hydrogel.
- 29. The method of claim 28, wherein the hydrogel releases the active agent over a period of time ranging from about 1 day to 6 months.
  - 29. The method of claim 20, wherein the hydrogel is biodegradable.

- 30. The method of claim 20, further comprising administering a contrast agent.
- 31. The method of claim 20, wherein the crosslinkable groups are crosslinked via free radical polymerization.
- 32. The method of claim 20, wherein the free radical polymerization is redox initiated.
- 33. The method of claim 20, wherein the crosslinkable groups are olefinically unsaturated groups.
- 34. The method of claim 20, wherein the article is selected from the group consisting of a catheter, tubing, vascular graft, heart valve, suture, prosthesis, dialysis membrane, filter, sensor, wound dressing, and drug delivery article.
  - 35. The method of claim 20, wherein the article is a microsphere.
- 36. The method of claim 20, wherein the hydrogel is formed as a coating on the article.
  - 37. The method of claim 20, wherein the article is formed in a mold.
- 38. The method of claim 20, wherein the article is formed on a substrate.